

Reviews and Bibliographical Notices.

I.—On the construction, organization and general arrangements of hospitals for the insane, with some remarks on insanity and its treatment. By THOMAS S. KIRKBRIDE, M. D., LL. D. Second edition, with remarks, additions and new illustrations. Philadelphia : J. B. Lippincott, 1880; Chicago : Jansen, McClurg & Co.

The republication of this book, after a lapse of twenty-six years since its first and only previous edition, is, at the present time, a matter of considerable interest and calls for special notice. The questions as to the best methods of construction and organization of hospitals and asylums for the insane are now attracting particular attention among specialists, and views in some respects directly opposed to those contained in this volume have of late years found many advocates. The public also, with the admitted increase of cases of insanity and the consequent demand for further means for their accommodation, has begun to take an interest in the matter, and tax-payers are beginning to ask if there cannot be less expensive methods and plans of hospital construction at least for a portion of the insane,—the admittedly incurable and chronic cases. The belief is also gaining ground in the profession and also amongst some of the laity, who have to do with the administration of our public charities, that this class of the insane forms a much larger proportion of the whole than was formerly thought to be the case, and that our expensive hospitals, built on the claim that they were for the curative treatment of mental disease, have become and indeed always have been mere places of detention for by far the greater number of their inmates,—a purpose that could be much better served by less expensive establishments. Questions have also arisen as to the organization of our hospitals and asylums, as to the qualifications and functions of

their officers, and the systems and conditions now existing in these regards have been the subjects of a very large amount of criticism. The reiteration, therefore, of the older and long dominant views, in this second edition of Dr. Kirkbride's work, at the present time, challenges at least a careful examination.

The conclusions here embodied are, he says, "the result of forty-two years' residence among the insane, with the personal responsibility of more than eight thousand patients in three institutions, varying greatly in their character and form of organization, the last thirty-nine years being in that with which the author is now connected and of which he has had the immediate direction since its opening. During this last-named period, too, the author had the experience of eleven years' active service as a trustee of a large State hospital.

"These opportunities for observation, with a desire to subject everything seeming to give a reasonable prospect of success to practical tests, and a pretty general knowledge of what has been done elsewhere in the care of the insane in and out of hospitals, have not only confirmed the writer's opinion as to the correctness of the principles in which he has again expressed his confidence, but have also tended steadily to increase his interest in all classes of the insane and his desire to secure for them such a provision as will be certain to give them every advantage they can receive from the most enlightened care and treatment. Nothing will be found advocated in this book that has not been fairly tested in the author's own experience."

The above statement is in evidence of the author's unabated convictions of the correctness of his views, but it does not necessarily force us to share them. We need not deny Dr. Kirkbride's ample experience with the care of the insane and his success with his own methods, while still admitting a doubt whether these methods are the best that can be devised, and whether success would not have been much greater had other plans prevailed. Moreover, in medicine, more than anything else with which we are acquainted, it is difficult to judge correctly of the merits of any plan by its apparent results, especially when the means for a comparison with other methods are wanting. The *post hoc ergo propter hoc* argument is often as valid to uphold the most arrant quackery as it would be in the present case, and, therefore, we do not consider it worthy of the slightest respect. The views advocated here must stand or fall on their intrinsic merits, and we propose to give them a perfectly fair but thorough examination.

The following are the fundamental propositions on which the whole work is based, as we have been able to glean them from the opening chapters: 1. Insanity is, if treated with sufficient promptness and appliances, a curable disease in a great majority of cases (80 per cent., according to Dr. Kirkbride's estimate). 2. It can be best treated in special hospitals adapted for the purpose, and only in such exceptional cases can it be successfully managed out of these that practically all require hospital treatment. 3. It is the better economy to cure insanity by prompt hospital treatment than to neglect it and to allow it to become chronic. 4. It is the duty of the State to provide for the proper custody and treatment of all its insane, and as all classes have a common interest in this question the provisions should be for all alike.

We have endeavored to state these propositions fairly, and, indeed, cannot make any other interpretation of the first eight chapters than that embodied in them. The author states them, in substance, as almost self-evident facts, and covers them with very little verbiage, and practically supports them with no argument. There is no question but that it is better economy to cure insanity than to support it at public expense after it has become incurable, but this is almost the only statement conveyed in them with which we can fully agree. As to the curability of insanity, it is very far from correct or safe to assume that a majority of cases, developed to the extent that they must necessarily be to be admitted to a State hospital, are curable. The safeguards required for the proper committal of such persons, themselves prevent them from reaching the hospitals, as a rule, till after the preliminary stages of the disorder have passed by, and it is already become well-developed insanity. The disease cannot be nipped in the bud by any such appliances, and, therefore, we are of the opinion that the value of these institutions, in this respect, is greatly over-estimated. Their statistics certainly do not exhibit any such success as this. Dr. Kirkbride's own institution has, from its opening in 1841 to 1880, discharged as cured only 3,681 patients (or cases) out of 8,982 admitted, or about 47 per cent.—certainly not a majority. This number would probably be much reduced if readmissions were excluded, for we find, from the same report, that only about 72 per cent. of the admissions were first attacks. Dr. Kirkbride's institution is exceptional in many respects, and we presume that insanity is fully as successfully treated there as it is anywhere in this country, its percentage of recoveries on admissions is better than that of many, indeed, by this showing is far better than that

of the majority of hospitals at the present day, but it does not justify the first proposition given above. We need not follow the argument further; it may be put down that the curability of insanity in State hospitals is not by any means so great as is stated in this work. The second proposition depends somewhat upon the correctness of the first; if it is found by statistics that the hospitals discharge as cured only a minority of those that come to them for treatment, while it is claimed that a majority of cases are curable, then it falls to the ground, for it proves that they do not accomplish the best possible results, and, consequently, that, for some reason or other, they are not the best places for the treatment of insanity. When this can be said of the richest and best equipped, and presumably the best in other respects, such as the institution under the charge of the veteran author of this work, the case is made still stronger against them.

The special hospital function of all public institutions for the insane maintained in this book, has been, we believe, a leading doctrine of the Association of Superintendents, and has been with them the plea for the style of expensive institutions specified in their propositions given in the appendix. Dr. Kirkbride is in this volume only their spokesman and commentator. It is refreshing, therefore, to find occasionally a leading member of that Association taking the opposite ground, like Dr. Hughes in the last number (January, 1881) of his journal, *The Alienist and Neurologist*, where he enunciates a number of different classes of the insane, forming altogether, when we come to consider them, no mean proportion of the whole, who can be equally well or better treated outside of public institutions.

There is, as we have said, no dispute as to the economy of curing the insane rather than allowing them to become chronic charges upon the community. The only question is: How are we to provide for the curable and the incurable cases? Chronic demented and many other cases of chronic insanity who, when in mental health, lived in hovels and cottages, do not require, in our opinion, when insane, to be housed in a palace and surrounded by comforts and appliances that they are unable to appreciate. All they reasonably need is to be cared for humanely and efficiently, to be adequately fed, clothed, warmed and housed, and protected from harm to themselves and from injuring or annoying others. What they need is an asylum, not a hospital, a place where they are well provided for, a due care being taken to supply them with proper medical treatment when required, and suitable care at all times,

not the barbarous quarters and treatment they now too often receive in county poor-houses and jails. The chance of the possible improvement or recovery of many apparently chronic cases must not be lost sight of, but it is not worth while to put them, as a class, on the same plane as recent and hopeful cases. Therefore, the fourth proposition, that provision should be made for all classes alike does not appear to us to be correct; if it is assumed that a portion of the insane require hospital treatment, it need not be so extended as to cover all classes. It is plainly useless to increase the expense of caring for all the insane on the pretense of curing the admittedly incurable, and the notion that it is necessary to equalize the treatment of all classes seems, when we consider how large a proportion are often unable to appreciate the differences, unworthy of consideration. The practical working of this idea is to provide elegant buildings for officials, and, it may be, luxurious quarters for a portion of the insane, leaving another portions in conditions that are too often a disgrace to our boasted civilization and humanity.

But one style of asylum building is discussed in the first part of this volume, and that is the one that is familiar to almost every one who has visited one of these State institutions; there are, thanks perhaps to the influence of this work and the Association whose views it embodies, very few exceptions to the plans recommended here. It is not necessary for us to go into the details of construction here given; the reason for condemnation of the plans is contained in the general remarks on the leading idea of this book, their expense. This has, in some recently built asylums, reached three, four, and even five thousand dollars for each insane inmate for whom they have accommodations, and in the immediate vicinity of these we have such instances as one mentioned by a Massachusetts State official, of the pauper insane sitting naked in straw in a town almshouse, in sight almost of the Danvers palace, one of the most expensive modern asylums on the Kirkbride plan.

If these plans are to be followed, the specifications are well enough, for the most part, and in some particulars they will apply to other plans. But the prevailing monotony of expensive linear hospitals for all classes of the insane alike should be broken in upon, and we are disposed to emphasize this point as we notice the reissue of the present volume. The destruction of a few of these establishments by fires, such as those at St. Joseph, St. Peters, or Danville, ought to teach a lesson that this work cannot

counteract, though they emphasize only a single one of the objections that can be urged against them. We see also, from the report of the superintendent of the St. Joseph Asylum, Dr. Catlett, that in the experience of the authorities of that institution, the temporarily providing for the insane in outlying cottages and buildings has proved a valuable therapeutic measure. The accident of the fire thus doubly points a moral, showing, as it does, not only the disadvantages of the old plan, but also the advantages of the new. Dr. Catlett comes out strongly in his last report as an advocate of the cottage or detached ward system for the chronic and homeless insane.

The second part of the work relates to the organization of State hospitals for the insane, and here also we find abundant opportunity to differ with the author. The whole system of asylum management in this country is, we think, based on wrong principles, and the evidence of this is daily accumulating through State legislative investigations and otherwise. Political appointments and changes, and the irresponsible and absolute power so generally vested in superintendents and boards of trustees, cannot fail to work out disastrous results while human nature is so constituted as we know it to be. We do not mean to infer that men in these positions are necessarily unworthy; we only wish to state, as applied to this question, the well-known truth that it is dangerous to entrust such unlimited power to any man or set of men, a fact that the experience of all the world has long since abundantly demonstrated in other matters. There is no power which one man can exercise over his fellow-men, not even that of military and naval commanders or prison authorities, that is more absolute than that of an asylum physician over those entrusted to his charge. There is no other class of persons in this country since the abolition of Southern slavery that are so legally disqualified for self-defence, and, therefore, of none whose rights the general public should be more justly jealous. And yet there is no class more irresponsible to the general public under the present system of non-oversight in most of the States of our Union than the superintendents who have these unfortunates in their charge. It is only by some irregular and extraordinary method that asylum abuses come to light, some special legislative investigation, or some glaring scandal that cannot be hushed or whitewashed, and then it is naturally unfortunate for all parties concerned. How many equally damaging facts to those occasionally exposed, exist and are suppressed can only be inferred from the possibilities.

We cannot better state the present system and its opportunities for abuses than by a quotation from a recently published essay by Mr. Dorman B. Eaton in the *North American Review*, which contains a large amount of truth very strongly stated. He says, after noticing the extraordinary powers given to the trustees of the lunatic asylum at Utica, N. Y.,—a typical American institution in its organization : “ But the authority of the asylum superintendent is, if possible, more dangerous and unchecked than that of the trustees. He is an autocrat,—absolutely unique in this republic,—supreme and irresistible alike in the domain of medicine, in the domain of business, and in the domain of discipline and punishment. He is the monarch of all he surveys, from the great palace to the hen-coops, from pills to muffs and handcuffs, from music in the parlors to confinement in the prison rooms ; from the hour he receives his prisoner to the hour when his advice restores him to liberty. Here is the almost incredible power given by statute to an asylum superintendent. He assigns all officers and employés to duty. He prescribes all diet and treatment. He appoints (subject to the managers’ approval) as many assistants and attendants as he thinks proper. He prescribes them duties and places. He (subject to the managers’ approval) fixes their compensation. He discharges any of them ‘at his sole discretion.’ He suspends any resident officers. He can give ‘*all orders he may judge best* * * * in every department of labor and expense.’ He is authorized to ‘maintain discipline’ and to ‘enforce obedience’ to all his own orders. He keeps the only required accounts, and the only record of his doings ‘and of the entire business operations of the institution.’ He approves the bills he has contracted. He makes the only report of his own administration. He, too, is the person who gives the permit upon which his prisoners may be restored to liberty.

“ This unparalleled despotism—extending to all conduct, to all hours, to all food, to all medicine, to all conditions of happiness, to all connection with the outer world, to all possibilities of regaining liberty—awaits those whose commitments may easily be unjust if not fraudulent, whose life is shrouded in a secrecy and seclusion unknown beyond the walls of an insane asylum,—is over prisoners the most pitiable of human beings, whose protests and prayers for relief, their keepers declare and many good people believe, no man is bound to respect. When Frederick the Great defined his despotism as one under which he did what he was a mind to and his subjects said what they were a mind to, his sub-

jects were able to speak for themselves and could make their complaints ring through the kingdom. It would be almost incredible that such authority should be conferred upon any officer in this country had not the public for a long time supinely accepted their theories about insanity from asylum superintendents, by whom this statute was so naturally dictated in their own interests. It assumes superintendents to be saints, with whom passion, selfishness, revenge and neglect are impossible."

It is true, Mr. Eaton says a little further on, that, in spite of this vicious system, there have been under it admirable asylum officers, and we think that at the present time a very large majority of the superintendents are far better than could reasonably be hoped for. There are also differences in the laws of different States from that in New York above referred to, but the variations are, in the main, only in degree of badness, not in kind. If we find officers faithful, conscientious, and humane anywhere, we can credit it to their innate moral sense and feeling of responsibility as citizens, not to their environment. The men are better than the system, which many of them honestly but mistakenly uphold. Among these we include Dr. Kirkbride himself, for we cannot ignore his honorable personal record of so many years. The fact also that this despotism exists in a society with which it is altogether incongruous, and that exposure of abuses will be disastrous, is itself no small check on a prudent man, but that it is not always sufficient is demonstrated by facts that are constantly coming to light in different parts of the country.

The volume before us in every respect defends the present system of absolutism on the part of the superintendents. Even the trustees, who have the general supervision of the establishments, must apparently defer to him. Their functions, according to Dr. Kirkbride, seem to be decidedly general, not special, in their character. A few quotations will show the drift of his opinions.

"One of the most important duties connected with the trust of these officers will be the appointment of the physician-in-chief and superintendent of the institution, and, on his nomination and not otherwise, of suitable persons to act as assistant physicians, steward and matron, * * * While giving the strictest attention to their own appropriate functions, they should most carefully refrain from any interference with what is delegated to others, and meddling with the direction of details for which others are responsible. * * * Under no circumstances should a trustee so far forget the proprieties of his station as to resort to subordinates for information that should come from the superintendent," etc.

The proposition of the Superintendents' Association in regard to the functions of the superintendent is quoted and amplified upon, and the present system, in vogue in most of our asylums, which practically makes that official a despotic executive rather than a medical officer, is defended at length. We have already in former numbers of this JOURNAL expressed our views on this subject, and therefore it is not absolutely necessary for us to enter again upon this phase of the subject here. We will, however, say that to our mind the chief function of such an institution is its medical one, and all others are subordinate. A really scientific medical man, who has the proper professional qualifications for the care and treatment of insanity and the proper professional spirit that it necessarily requires, will feel a natural dislike to having all his powers turned in other directions. Dr. Kirkbride is evidently of the opposite opinion, for he says: "The physician-in-chief who voluntarily confines his attention to the mere medical direction of the patients must have a very imperfect appreciation of his true position or of the important trust confided in him. He becomes, in reality, a very secondary kind of an officer, and his functions will be pretty sure to be considered by many around him as quite subordinate in importance to those of some others concerned in the management of the establishment, which, under such an arrangement, can hardly keep permanently a high character."

When we consider how much the medical (and hygienic) direction of the inmates of an insane asylum implies, the above passage does not appear to contain a very large amount of valuable truth. The medical superintendent must necessarily have authority over everything relating to the care of his patients, and as the only reason for the existence of the establishment is to provide for this, especially if we maintain the exclusive hospital function advocated in this work, the superintendent should have the predominant voice in its management. This much may be admitted. But it is none the less a perversion of his functions that he should be made at once steward, bookkeeper, farmer, architect, engineer or overseer of shops, to the exclusion of any part of his proper professional duties.

The medical charge of a great hospital requires a higher and more special grade of talent than is needed to conduct the financial and commissary departments of the concern. If a superintendent voluntarily devotes himself to these latter details exclusively or for the most of his time, the inference is not unjustifiable that he knows what he is best qualified for, and virtually

admits his professional incompetency. If the system of organization of these institutions is such as to force these duties upon him to the extent of depriving him of time for his proper medical oversight of his patients, then it should be condemned, and professional public opinion should be so strong against it as to compel its alteration. A sentiment has grown up in this country, largely due, we think, to the influence of the Superintendents' Association, that administrative ability is the chief requisite in an asylum superintendent, and boards of charities and asylum trustees largely act on this assumption in the choice of these officials. Notwithstanding the fact that many good men obtain positions in spite of this sentiment, its effect is seen in the reactionary and unscientific spirit of the Superintendents' Association, and the general low grade of American psychiatry. This notion also is a main support of the miserable system, which every right-minded person regrets, of political control of these institutions that is in vogue in several States of the Union.

We have said that the medical superintendent of an asylum should have the predominant voice in its management. We do not mean by this that he should be an irresponsible or despotic chief official; there should always be a careful supervision by a competent and upright officer or commission on the part of the State. Dr. Kirkbride's remarks on this point are, in the main, correct; the value of the services of these inspecting officers will depend upon the men, their competency and integrity. We believe, however, that the fear of a poor appointment should not stand in the way of there being such a supervision; the office may be unworthily filled for a time, but public opinion should be and would be sufficiently awake to prevent this being a permanent condition of affairs, after it had once been aroused to a knowledge of the usefulness and need of such inspection. On the other hand, a public opinion that is altogether quiescent on this matter is much less desirable and hopeful. The inspection, as Dr. Kirkbride says, should not be made with the presumption that it is to disclose dishonesty and unfaithfulness, nor should it, on the other hand, assume beforehand that this is necessarily not the case, but it should be vigilantly critical and thorough in all respects, as well as perfectly fair and unprejudiced. Only by such an inspection can the best results be obtained.

The appendix at the close of the work contains the much lauded propositions of the Association of Superintendents of American Institutions for the Insane. We might notice these but

that their objectionable features have already received attention in this review. The association itself, however, deserves a few words. As is well known, and indeed, is indicated in its title, this body is composed exclusively of those who, through political influence or otherwise, have obtained the position of chief officer of an asylum. It is, therefore, not strictly a scientific nor even an orthodox medical society, for by its organization representatives of any school of medical practice that has sufficient political influence, and even non-graduates in medicine may become its members. It is, as Mr. Eaton says in the essay already quoted, "a combination for mutual support and self-defence by a large number of isolated officials," a trades-union rather than a scientific professional association. It has no analogue, so far as we know, in any other country. And to quote again from the same essay, it is self-evident that, "as average human nature is, it was inevitable that an association thus organized should crystallize old methods and abuses and become, in itself, an obstacle to reform."

We say this with the kindest feelings toward the individual members of the association, a majority of whom we believe worthy of membership in a better organization. It is to be hoped that the time will soon come when, instead of this close corporation, there will be only one society that can include not only superintendents but assistant physicians of asylums and all other persons interested in the medical cure of insanity and allied conditions. The beginning of this is, we believe, now to be seen in the recently organized Association for the Protection of the Insane and the Prevention of Insanity, which held its first session last year. The old organization may go on, eating and drinking, and marrying and giving in marriage, as heretofore, but judgment will certainly come, if it continues to be an active obstacle to reform.

We have given as much space as we have to the notice of this book, not so much because of its medical or scientific importance as because the ideas it contains are those that have prevailed so long in this country to the damage, we think, of scientific medicine and of the interests of the insane. We have noticed especially the points in regard to the organization of asylums or hospitals where we differed with the author for this reason. In many of the minor details here discussed we, with every other person who wishes well for the helpless insane, must agree with him. There is not much, however, that is particularly novel

or suggestive in these, and the main features of the work are the ones to which we have made objection. Its republication at the present time, when agitation for reform in these matters is fairly under way, makes its reiteration of the old-time views appear like an attempt to stay the tide of progress and to defeat reform. The methods approved by the Superintendents' Association have had a fair trial now for a generation and their success has not been so great as to justify their continuance without modification. All knowledge of insanity is not confined to that body, as some of its members would have us believe, and the experience of foreign countries would itself suffice to teach us better ways than they have so far led us in.

While advocating reform and change we can give full credit to Dr. Kirkbride and many of his associates for good intentions and perfect honesty of purpose. It is not to be expected that men who have grown up with a system and who have worked under it till they have lost their mental flexibility of youth should be able to see any benefits in a change. Indeed, their conservatism may be of some little service in checking some possibly inconsiderate and ill-advised movements. But there can be no question of the fact that reform is needed and that it will surely be brought to pass.

II.—1. Fever. A study on morbid and normal physiology. By H. C. WOOD, A.M., M.D. Smithsonian contributions to knowledge. J. B. Lippincott & Co., Nov. 1880.

2. Contribution à l'étude des températures périphériques et particulièrement des températures dites cérébrales dans les cas de paralyses d'origine encéphaliques. Par le Dr. HENRI BLAISE. (*Peripheral and the so-called cerebral temperatures in paralyses of cerebral origin.*) Paris, 1880, G. Masson, pp. 275.

1. It is with special interest that we begin this review with one of those *raræ aves*, an American contribution based wholly on original research. Dr. Wood is well known as an investigator in the front ranks of his department. A large work from his pen on so important a topic should, hence, not fail to command general attention, especially in the really elegant garb which this possesses. The present volume is a continuation of the author's former publications on heat-stroke and fever. (The latter was reviewed in this JOURNAL, July, 1875.)

In the first chapters he repeats a part of his previous publications. He points out that the essential symptom of fever is the elevated temperature, and shows experimentally that all febrile

symptoms can be produced by augmenting the bodily temperature. His (not very numerous) experiments showed that a temperature of 113° to 117° F. is incompatible with the life of the mammalian brain. He does not claim that all the clinical manifestations in fevers are due to the heat of the body. But it seems to us that not enough stress is placed on the difference between the disorders due to the temperature alone and the accompanying symptoms referable to some other cause. The difference is illustrated especially in the comparison between the aseptic fever of subcutaneous injuries or disinfected wounds and the ordinary surgical fever. As Genzmer and Volkmann have pointed out, the former state is accompanied by scarcely any subjective complaints.

Wood examines hereupon the cause of the rise in temperature. He shows experimentally that the bodily temperature rises when an animal is placed into a chamber of about the temperature of the body, or above, but that the rise is more marked after a high section of the spinal cord. On the other hand, an animal with divided cord will lose in temperature when surrounded by air cooler to any extent than its body. These results are not new; they agree with previous observations.

In order to learn the total amount of heat-production and heat-dissipation under these circumstances, a calorimeter was constructed. According to the test experiments, the apparatus seems quite reliable as long as it possesses about the temperature of the surrounding air. Above or below the degree of the atmosphere its indications are mistrusted by the author himself. A glance at the numerous tables of figures in the volume must convince the reader of the immense amount of work involved, and the faithfulness with which it was executed. The author acknowledges in this connection the valuable aid of his two promising assistants, Drs. Hare and Lautenbach, both now deceased.

By means of the calorimeter it was determined that the amount of heat lost through the skin is considerably augmented for some hours by section of the spinal cord, but that the dissipation of heat subsequently falls below the normal amount.

In these experiments the temperature of the calorimetric chamber was equal to that of the ordinary air. Hence, the animal temperature did not rise under these circumstances. The total amount of heat produced in the body is lessened, probably on account of the depressing effect of the subnormal temperature of the tissues on tissue-change. However, on placing the animals in a warmer chamber, so as to allow their bodies to gain in temperature, the

production of caloric *is* increased. The augmented loss of heat the author attributes to the relaxation of the cutaneous vessels, caused by the section of vaso-motor nerves of the cord. This explanation is logical, and borne out by the observation that the loss of heat increases with height of the section; in other words, with the number of vaso-motor nerves cut off from the centre. Hereupon the author enters upon a long discussion about a *heat-centre*, alleged by Tscheschichin to exist above the medulla oblongata. He still maintains the views announced in his Toner lecture on fever (1875). By severing the medulla oblongata from the pons, the temperature usually rises, even when the air is cool, provided the vaso-motor centre in the medulla is not paralyzed by the injury. The latter point can be decided by the possibility of a reflex rise in the blood-pressure on irritating a sensory nerve. In some instances no fever occurs, although the experiment seems successful in other respects. The cause of these apparent exceptions is revealed by the calorimeter. There is always increased heat-production, but the accumulation of caloric is prevented in such cases by an even greater dissipation of heat through the relaxed vessels of the skin. In rabbits no rise of temperature was ever observed on severing the medulla from the pons, probably on account of the impossibility of avoiding a lesion of the vaso-motor centre in this small animal. In his review of the literature Wood has evidently overlooked the confirmatory experiments of Schreiber reported in *Pflüger's Archiv*. (vol. viii).

Wood assumes, on the strength of his researches, that there exists in the pons, or even higher up in the brain, a centre regulating the production of heat. On severing the tissues from this centre, the heat-production is increased. The centre is, hence, inhibitory. That the increased temperature is not due to irritation of the medulla by the lesion, the author tries to prove by irritation of the medulla with needles. The results were not constant, and the experiments uncertain as they were, were not numerous enough to prove the point.

Heidenhain had previously announced that when a sensitive nerve is stimulated, a fall of temperature occurs simultaneously with the rise of blood-pressure. This result he attributed to a more rapid flow of the blood through the cutaneous vessels. Wood attacks this explanation, but on entirely erroneous physical notions. Moreover, the explanation seems even better justified since the researches of Ostroumoff (in Heidenhain's laboratory), who showed that the cutaneous and internal blood-vessels do not

contract alike on stimulation of sensitive nerves, but that, in fact, the skin becomes hyperæmic by vaso-dilator reflexes. Hence Wood's attack on the view of Heidenhain is not successful. Wood himself attributes the fall of temperature on irritating sensory nerves, to a reflex activity of the alleged heat-inhibitory centre. In order to prove his point, he examined the temperature on irritating sensory nerves after a previous section of the upper part of the medulla. The results were indeed negative, but they do not prove anything, since in his comparative experiments in which the medulla had not been touched, likewise no definite results were obtained. The author attempted to locate the heat-centre more accurately by means of caustic injections into different parts of the brain, but found the method unreliable.

Eulenburg and Landois, as well as Hitzig, have found that destruction of the motor centres in the cerebral cortex causes a rise in the temperature (of the skin) of the other side of the body. Wood repeated these experiments on a large scale, but measured the total heat-production of the body with the colorimeter instead of observing the cutaneous temperature. His results were, that "destruction of the first cerebral convolution in the dog, posterior to and in the vicinity of the sulcus cruciatus, is followed at once by a very decided increase of heat-production, whilst after irritation of the same nervous tract there is a decided decrease of heat-production." The motor centres seem to be irritated by lesions in other parts of the cerebral surface, since in such experiments the production of heat was always reduced. The effects of destruction of motor centres are, however, transitory, probably not lasting over twenty-four hours. The author justly argues that this does not overthrow the existence of these centres, since the paralytic effects on muscular movements and coördination are likewise but transitory in the dog. He supports his position by a very appropriate discussion of the theory of "localization."

In the next place the author claims that the influence of the cerebral centres is not exerted through the vaso-motor nerves, but is due to direct effect upon the tissue change. The experiments he quotes in proof of this view are novel and interesting, but we fail to see how they can justify his conclusions.

He found, in the first place, that the reflex rise of blood-pressure produced by irritation of sensory nerves can still be obtained in the curarized animal after section of the vagi and splanchnic nerves. It is, of course, not great, since the division of the splanchnic nerves lowers the blood-pressure enormously.

The rise which he did obtain, he attributes to reflex contraction of vessels others than those of the abdominal cavity (territory of the splanchnic nerve).

If the contraction of these vessels alone can raise the arterial tension, he argues, irritation or, on the other hand, destruction of motor centre in the cortex would alter the blood-pressure if the cortical centres controlled these vessels. But neither electric stimulation of the cortical centres nor their destruction had any effect upon the blood-pressure (before or after section of the splanchnic nerves). Hence the influence of the cerebral gray substance upon the temperature does not depend on vaso-motor action. But this conclusion is illegitimate. The reflex rise of pressure on stimulating sensory nerves after previous division of the splanchnics is due to contraction of *all* the vessels still connected with the vaso-constrictor centre. Moreover it is not certain that the splanchnic nerves contain *all* the vaso-motor filaments of the abdominal cavity (Asp). In operating on the cortical surface, on the other hand, we evidently do *not* influence all vessels of the body, and contraction or relaxation of a limited number of vessels, for instance, those of one or even several extremities, does not change the general blood-pressure, as can be shown by experimental ligation of vessels. However ingenious Wood's experiments are, they do not prove the point he claims. In fact, the experiments of Eulenburg and Landois show directly that the motor centres (or at least adjoining centres in the hemispheres) control the local circulation in the vicinity of the muscles which they command.

The following chapter is devoted to a discussion of fever.

The more important results of other observers are critically examined. But we miss in this place a reference to some of the most valuable contributions to literature, for instance, the researches of Murri and of Leyden and Fränkel. Wood's own experiments are about half a dozen in number, but bear the stamp of conscientious accuracy. The animals received injections of stale blood or pus and were examined in the calorimeter for several days, many hours or even a whole day at a time. The conclusions may be stated in his words, since they seem to be the natural inferences of the experiments.

"In the pyæmic fever of dogs, the heat-production is usually in excess of the heat-production of fasting days, but less than that which can be produced by high feeding; usually the production of animal heat rises in the febrile state with the temperature and

with the stage of the fever, but sometimes the heat-production becomes very excessive, although the temperature of the body remains near the normal limit. In rabbits with pyæmic fever the heat-production seems to be even greater than it is in health, when food is taken.* Fever is a complex nutritive disturbance in which there is an excessive production of such portion of the bodily heat as is derived from chemical movements in the accumulated material of the organism, the overplus being sometimes less, sometimes more than the loss of heat-production resulting from abstinence from food. The degree of bodily temperature in fever depends, in greater or less measure, upon a disturbance in the natural play between the functions of heat-production and heat-dissipation, and is not an accurate measure of the intensity of the increased chemical movements of the tissues."

In the last chapter Wood discusses the theory of fever. He admits that most fevers, which we observe clinically, are due to the existence of pyrogenic agents in the blood, and that the purely neurotic origin has never been proven in any fever. Still, he thinks it likely that such temporary febrile movement as results from teeth-cutting or intestinal disturbance may be due to nerve irritation. In aid of his view, he points out the increased production of heat and formation of CO_2 , resulting from the application of stimulants to the skin, especially cold.

So far his conclusions are well justified by the facts, but when he claims that the fever-producing agents existing in the blood exert their influence primarily upon the heat-centre, he seems to pass beyond proof. The experiments of Murri, who elevated the temperature by the injection of pyrogenic substances after a high division of the cord, certainly contradict such an exclusive view. Still Wood does not claim absolute paralysis (except in cerebral rheumatism) of his heat-inhibitory centre in fever, but only a state of paresis. He tries to disprove, indeed, the paralysis by reducing the febrile temperature by means of stimulation of sensory nerves. But the experiments are just as inconclusive as similar ones on non-febrile animals referred to above. The tables do not show any immediate or constant depression of temperature from the pain, beyond the usual diminution of the heat in fettered animals, to which Wood does not call attention. Finally, the author explains the role of the vaso-motor system in fever, claiming that it is benumbed so as not to respond readily to the necessity

* The completion of digestion in the rabbits requires a number of days, the alimentary canal being filled even when no food is eaten for several days.

for the dissipation of the excessive heat. Again we must differ from him. Clinical experience as well as experimentation has shown that, during the febrile state the vaso-motor nerves of the skin are really abnormally excitable.

While thus many of the conclusions are not fully supported by the experiments, the book, as a whole, is really one of the most valuable American contributions to experimental pathology. Apart from the original portion, it consists of a thoroughly critical review of literature not easily accessible otherwise. Though the size is not very convenient, the appearance of the work is truly elegant.

2. The French work, above noticed, is of an entirely different character. It, too, contains some original research, purely clinical, but the bulk of the volume consists of a voluminous critical review of literature. The author begins with a history of observations on cerebral and cranial temperature from the earlier researches of A. Davy down to the last statements by Amidon. These results are criticised on the basis of Frank's experiments. By direct test the latter observer found that it requires a change of temperature of at least 3° C. in the cranial cavity in order to obtain any decisive indication by a thermometer applied to the outside of the skull. Since the cerebral tissue conducts heat better than the cranial bones it is physically evident that any differences in temperature of adjoining regions of the scalp cannot be referred to the actual temperature of the brain. The author himself quotes Frank *in extenso*, but does not add anything further himself. If such differences in the temperature of adjoining parts do exist, as has been claimed, they must be accounted for by the variations in the vascularity of the scalp. Blaise has taken the cranial temperature in a number of healthy persons and obtained results comparable to those of his predecessors. He, too, found the frontal region warmer than the parietal, and the occipital coolest of all, there being a difference between the two sides in favor of the left. But the differences, according to Blaise, are very small, his extremes in six instances ranging from 35.75° to 36.75° C. The discrepancies existing between his and the much lower figures of Broca (as low as 33°), he refers to the method. He kept his instruments in contact for 45 minutes. The extreme limits which he admits as occurring in health, may range from 34° to 37° C.

The following chapter contains the record of numerous painstaking observations in various nervous diseases, especially cere-

bral softening and apoplexy. The reward for so much labor, however, was very small, the differences found between the two sides being but very small and by no means constant. More positive results have been obtained by American authors. Gray and Mills have both found elevation of the cranial temperature on the side of a tumor, while Mary Putnam Jacobi has seen a marked increase in heat over spots of tuberculous meningitis. Blaise considers the number of such instances as yet too small for diagnostic conclusions.

In the following part Blaise discusses a more important and practical topic, viz., the course of the temperature in the axilla and the limbs in paralyses. His own researches are always preceded by an excellent résumé of the literature, which alone renders the work valuable for reference.

In *cerebral hemorrhage* three stages have been described by Charcot and Bourneville and confirmed by the author. In the first stage, lasting at the most some three hours, the temperature often sinks several degrees, especially in the limbs, less so in the head. The paralyzed limbs are the cooler, especially at their periphery. During the second stage the axillary temperature remains about normal, oscillating within narrow limits for some hours or days. This stage is absent in very severe cases, in which the cooling is followed at once by a rather sudden rise, lasting rarely beyond one day, and preceding death. The repetition of hemorrhage causes a reappearance of the first stage. During the stationary period there is little or no difference between the two sides as to the temperature.

In *cerebral softening*, on the other hand (from embolism or thrombosis), the stage of falling temperature does not exist. Within a short time the temperature begins to rise, but in a variable manner. Sometimes it rises slowly but steadily; in other instances the elevation is sudden but very transitory. A rapid return to the normal figure is of favorable prognostic significance, while death usually occurs after a steady rise. The temperature is thus an aid in diagnosis between cerebral hemorrhage and embolism. In the latter affection there is but a slight and no constant difference between the two axillæ.

The *post-mortem* rise of temperature is hereupon discussed very fully. The most striking results may be thus summarized: In most cases of apoplexy there occurs a considerable rise after death, especially after cerebral hemorrhage; less so after embolism, unless the territory of the brain implicated was a very large one.

This rise is not noticed when death is the immediate consequence of the hemorrhage. When the apoplexy is due only to congestion the rise is not marked. The *post-mortem* elevation is due to the chemical changes persisting in the tissues until cellular death is complete, while loss of heat is prevented by stoppage of the circulation (in the skin) and the perspiration. The author attributes a share also to the onset of rigor mortis, and to the coagulation of the blood (?).

Finally, Blaise observed the temperature in the limbs in various forms of paralyzes, supplementing his observations by a very full review of the results of physiological experimentation. His own results can be summarized in about the following words: In paralysis of cerebral origin not beginning with apoplexy, the temperature remains about normal, or does not rise much. In hemiplegia the paralyzed side is usually cooler than the normal extremity, though a few exceptions in favor of the paralyzed side can be observed. No absolute distinction was found by the author between recent and old forms. This difference between the two sides is not always permanent; it may increase or diminish. Any difference between the two sides, if it exists, is most marked in the periphery of the limb; much less so at its root (axilla). This is due to the sluggish circulation on the injured side, revealed by the purple coloration of the skin. Hence the more exposed parts are apt to cool more readily.

The presence of contractures did not affect the local temperature. In hemianaesthesia a difference was always found, the anaesthetic side being the cooler, though the difference never surpassed 1° C. This lower temperature co-exists with diminished perspiration and anæmia of the parts. The nature of the cerebral lesion causing the paralysis did not seem to influence the local temperature.

Lastly, the author relates some experiments consisting in the application of sinapisms to paralyzed limbs, showing that the resulting congestion causes the temperature of the skin of that part to rise, as might have been expected. The rise, however, was very slight, but was always accompanied by a phenomenon of transfer, a corresponding reduction in the temperature of the symmetrical part of the other side.

The last chapter contains a detailed and wearisome report of the cases observed. The memoir, as a whole, does not add very much of a positive nature to our knowledge, but this is no fault of the author's. His labor in so many and accurate observations of

clinical cases deserves to be appreciated, even though the results were often negative as far as far-reaching conclusions are concerned. The work, however, contains full information on all the topics discussed. [H. G.]

III.—On certain conditions of nervous derangement, somnambulism, hypnotism, hysteria, hysteroid affections, etc. By WILLIAM A. HAMMOND, M.D. New York : G. P. Putnam's Sons. Chicago : Jansen, McClurg & Co. Pages, 256.

This may be regarded as a new edition of the author's work on "Spiritualism and Other Causes of Nervous Derangement." (1876.) He says :

"A book published in 1876, having for the last two years been out of print, I have taken the opportunity afforded by the demand for a new edition—which would long ago have been complied with but for the stress of other engagements—to thoroughly revise the work, and, while adding largely to the subjects now considered, to make it more homogeneous by omitting everything specially relating to spiritualism."

In the brief preface from which the above extract is taken, he continues :

"The interesting conditions of which the present volume treats are being attentively studied both in this country and in Europe, and ought to be brought to the knowledge of the general reader. They are the fields upon which the miracle-worker expends his most energetic labor ; for he knows something of the forms under which they are manifested, and he also knows that by making adroit use of them he can deceive thousands of innocent but ignorant people to his own advantage, and that of any system which requires miracles for its establishment or aggrandizement. As a knowledge of the conditions in question becomes more diffused, the ability to work miracles will be correspondingly diminished ; and in the hope of contributing to these ends this little book is written."

Such is the account given by the author himself of the origin and design of the present work. It is divided into seven chapters, with titles as follows :

I. Certain Conditions of Nervous Derangement. II. Some Phases of Hysteria. III. Another Phase of Hysteria. IV. The Hysteroid Affections—Catalepsy, Ecstasy, and Hystero-Epilepsy. V. Stigmatization. VI. Supernatural Cures. VII. Some of the Causes which lead to Sensorial Deception and Delusional Beliefs.

The portion of the work relating to natural and artificial somnambulism is an interesting collection of cases, but with no very serious, or at least successful attempt to explain the phenomena involved. The author says :

“ Now, after this survey of some of the principal phenomena of natural and artificial somnambulism, are we able to determine in what their condition essentially consists? I am afraid we shall be obliged to answer this question in the negative, and mainly for the reason that with all the study which has been given to the subject, we are not yet sufficiently well acquainted with the normal functions of the nervous system to be in a position to pronounce with definiteness on their aberrations. Nevertheless, the matter is not one of which we are wholly ignorant. We have some important data upon which to base our investigations into the philosophy of the condition in question, and inquiry, even if leading to erroneous results, at least promotes reflection and discussion, and may in time carry us to absolute truth.”

The mind is said by Dr. Hammond to be “ a force developed by nervous action.” He draws a distinction quite commonly made in classifying mental operations, that is, between those of which the subject is conscious and those of which the subject is unconscious. To this latter, according to Dr. Hammond, the phenomena of somnambulism belong. He says :

“ Somnambulism, natural or artificial, appears to be a condition in which consciousness is subordinated to automatism ; the subject performs acts of which there is no complete consciousness, and often none at all. Consequently there is little or no recollection. There is diminished activity of those parts of the nervous system which preside over the faculties of the mind, while those which are capable of acting automatically are unduly exalted in power.

“ The condition is, therefore, analogous to sleep ; for in all sleep there is in reality something of somnambulism. For the higher mental organs, as the sleep is more or less profound, are more or less removed from the sphere of action, leaving to the others the duty of performing such acts as may be required, or even of initiating others not growing out of the immediate wants of the system. If this quiescent state of the brain is accompanied, as it often is in nervous and excitable persons, by an exalted condition of the spinal cord, we have the higher order of somnambulistic phenomena produced, such as walking, or the performance of complex and apparently systematic movements ; if the sleep of

the brain be somewhat less profound, and the spinal cord less excitable, the somnambulistic manifestations do not extend beyond sleep-talking; a still less degree of cerebral inaction and spinal irritability produces simply a restless sleep and a little muttering; and when the sleep is perfectly natural and the nervous system of the individual well balanced, the movements do not extend beyond changing the position of the head and limbs, and turning over in bed.

"But the actions of the spinal cord—which is, I conceive, the organ chiefly controlling the mind in somnambulism—are not always automatic in character, as I have endeavored to show in another place.* The motions of frogs and of some other animals, when deprived of their brains, exhibit a certain amount of intellection or volition. That they are not more extensive is probably due to the fact that all the organs of the senses, except that of touch, have been removed with the brain, and hence the mechanism for coming into relation with the external world is necessarily diminished.

"In profound somnambulism the whole brain is probably in a state of complete sleep, the spinal cord alone being awake. In partial or incomplete somnambulistic conditions, certain of the cerebral ganglia are not entirely inactive, and hence the individual answers questions, exhibits emotions, and is remarkably disposed to be affected by ideas suggested by others. The ability to originate trains of thought exists only in very imperfect somnambulistic states." (P. 30 *et seq.*)

We have made this long extract partly because it contains the author's explanation of the curious phenomena of somnambulism, and partly because it contains several partial, and what we regard as erroneous, statements.

We would, first of all, direct attention to the, to say the least, awkward expression in which it is said "Consciousness is subordinated to automatism." "Consciousness" and "automatism" are here put, in fact and by implication, into unnatural and false relations. *Voluntary action*, not "consciousness," is the natural counterpart of "automatism" in the present case. The statement we have just quoted from Dr. Hammond would seem to imply that automatism necessitates the absence of consciousness or overrides it. But any one who has considered the familiar automatic acts of sneezing and coughing knows better. The somnambulist, even,

*"The Brain not the Sole Organ of Mind."—JOURNAL OF NERVOUS AND MENTAL DISEASE, January, 1876.

is often conscious of what he is doing, and, within certain narrow limits, consciously directs or controls his movements. It is admitted that the contrary seems to be true, as a rule, if we are to judge by the absence of a memory on the part of the somnambulist of what he has been doing.

But it is to the description given of the physiology of somnambulism that we would particularly direct the attention of the reader. Dr. Hammond is correct in saying that somnambulism is "analogous to sleep." It is incomplete sleep, from one point of view. It is true also that the brain, as a whole, is in a "quiescent state" during profound sleep. In dreaming or in somnambulism the brain is asleep only in parts; in parts it is awake; but this is not Dr. Hammond's view. He says (referring to the state in which the brain is during sleep):

"If this quiescent state of the brain is accompanied, as it often is in nervous and excitable persons, by *an exalted condition of the spinal cord*, we have the higher order of sonambulistic phenomena produced, such as walking, or the performance of complex and apparently systematic movements," etc. (p. 33).

Somnambulism depends on "an exalted condition of the spinal cord" while the brain is "quiescent" or in a state of profound rest. The somnambulist is practically in the same condition in which he would be if the brain had been removed, at least so far as the actions performed are concerned. From this view we dissent entirely. In the first place, we do not see by what means, in this case of Dr. Hammond's, the "exalted condition of the spinal cord" is produced. There are just two ways in which such a condition may be brought to pass: either by way of the peripheral (sensitive) nerves, which proceed from all sensitive surfaces and parts of the body to enter the gray matter of the cord and medulla, or by the excitations which enter this same gray matter by the way of fibres which descend from the brain. So far as is known to nerve physiology, there are no other directions from which excitations can come by which the spinal cord can be aroused to activity. Then it must be remembered that the cord is not a self-acting, self-determining mechanism. It must be excited to action, *ab extra*, or it remains inactive. But if the brain is "quiescent," the excitation to activity cannot come from that source. It certainly does not come by the way of the peripheral nerves directly to the cord, without the intervention of the brain. Our own opinion is, that in somnambulism the brain is only in part asleep. Certain portions are awake and in a state of intense activity; and from these

excited regions (its cortex) the stimuli pass along fibre-systems which extend from the cerebral cortex down to the motor mechanisms in the spinal cord, through which, in their turn, the muscles are set in action which produce the motions involved in the acts of the somnambulist. To fully discuss this question, however, would require a statement of the modern doctrine of localization of function in the brain, of the singular peculiarities in blood-supply to the brain, and, besides, at least the statement of certain facts in regard to the mechanism and modes of action of subordinate parts of the nervous system, for which we have no space in the present brief notice. But all that is known would go to make clear that limited parts of the brain may be awake and active, while others are asleep; that certain parts of the brain may be in a condition of hyperæmia, and hence active; while others may be at the same time in a state of relative anæmia, and hence of inactivity, as in sleep; finally, that the acts of the somnambulist imperatively require that the spinal cord must be excited from the brain, and, hence, that it is not in the "quiescent state" asserted by Dr. Hammond.

Dr. Hammond's explanation is not in accord with the facts of somnambulism, nor with those of nerve physiology; in short, it is not correct. The subsequent chapters are very interesting, especially in those parts which are descriptive. From this point of view the book is as exciting as fiction. With the explanations given of the curious phenomena described, we could seldom agree, either as adequate or correct.

In succeeding chapters on "Some Phases of Hysteria" and "Hysteroid Affections" are highly graphic recitals of histories of cases of nervous and emotional excitement under varying circumstances, among others, that which has attended religious revivals.

In describing the demonstrations accompanying some of the revivals of John Wesley, particular mention is made of those which occurred at Everton, in England, in which it is said Mr. Wesley preached from the text, "having a *fear* of godliness, but denying the power thereof." It may not be needless to remark that the text referred to, both in the Bible (2 Tim. iii:5) and in the works of Mr. Wesley (Works, vol. 4, p. 25) reads, "having a *form*," etc.

In a former work of Dr. Hammond the same erroneous quotation is made, and comment is inspired by a transient feeling of wonder that such an error should have continued to escape the eye of so diligent and reverent a student of Bible-lore as is the author of this interesting volume.

Dr. Hammond says that "catalepsy is characterized by the suspension of the understanding and sensibility," etc. (p. 114). This statement is certainly not always correct, if we understand its scope.

We have known a case of catalepsy in which *general* sensibility was abolished (chiefly the pain-sense) and in which the peculiar muscular phenomena were perfect, but in which the sense of hearing was perfectly preserved, and at the end of months when recovery took place the patient was able to recall the principal occurrences about her during the whole period of her illness, and declared that while she appreciated perfectly most things said and done about her, so far as certain of the special senses were concerned, yet she was powerless to control the organs of expression—that is, the muscles.

The remainder of the work is filled with accounts of exceedingly interesting cases of various sorts of nervous and mental disorders and conditions which will greatly interest and instruct the reader.

The work is greatly lacking in discussions of the curious phenomena described. As usual with the productions of Dr. Hammond, the style is agreeable and clear, and, on the whole, the work is as exciting as live fiction.

IV.—The feeling of effort. (Anniversary memoirs of the Boston Society of Natural History) By, WILLIAM JAMES, M.D., Assistant Professor of Physiology in Harvard University, Boston, 1880, pages 32.

This is an attempt to work out the physiology of the feeling or sense of effort experienced when a healthy individual executes a muscular act which is purposive, and to the execution of which the individual gives his particular attention. In physiological psychology, but few, if any other questions are of equal importance. Its determination is the most vital single step, perhaps, in the philosophy of perception. On having missed this point completely, depended largely the utter failure of Berkeley and his followers to construct a sound theory of perception.

The more important steps in a history of the advance of the physiological side of the subject are given, and due reference is made to the psychology of volition and consciousness as they are related to muscular action. The author denies that the "feeling of effort" arises out of the mere mental movement (or volition) at the point where nerve-action is initiated. But it arises rather from the resulting muscular contraction, which affects the sensory

nerves of the muscle, which, in turn, convey to the sensorium certain impressions produced on their peripheral ends during the contraction. A sort of sensation is experienced in the mind which refers to the tense muscles engaged in the muscular effort as its source. Of course this position necessitates what may be called a "muscular sense," and if so, the presence of sensory nerves for the muscles. Both these positions are admitted by the author. We have been unable, for a long time past, to see how any other positions could be rationally assumed, in view of the phenomena of voluntary muscular action, and in view of what has been long known or could be inferred in regard to the nerves of the muscles.

The conclusions of this clear and valuable paper, by Dr. James, are as follows :

"1. Muscular effort, properly so called, and mental effort, properly so called, must be distinguished. What is commonly known as 'muscular exertion' is a compound of the two.

"2. The only feelings and ideas connected with muscular motion are feelings and ideas of it *as effected*. Muscular effort proper is a sum of feelings in afferent nerve-tracts, resulting from motion being *effected*.

"3. The pretended feeling of efferent innervation does not exist—the evidence for it, drawn from paralysis of single eye muscles, vanishing when we take the position of the sound eye into account.

"4. The philosophers who have located the human sense of force and spontaneity in the *nexus* between the volition and the muscular contraction, making it thus join the inner and the outer worlds, have gone astray.

"5. The point of application of the volitional effort always lies within the inner world, being an idea or representation of afferent sensations of some sort. From its intrinsic nature or from the presence of other ideas, this representation may spontaneously tend to lapse from vivid and stable consciousness. Mental effort may then accompany its maintenance. That (being once maintained) it should, by the connection between its cerebral seat and other bodily parts, give rise to movements in the so-called voluntary muscles, or in glands, vessels, and viscera, is a subsidiary and secondary matter, with which the psychic effort has nothing immediately to do.

"6. Attention, belief, affirmation, and motor volition are thus four names for an identical process, incidental to the conflict of

ideas alone, the survival of one in spite of the opposition of others.

"7. 'The surviving idea is invested with a sense of reality which cannot at present be further analyzed.

"8. 'The question whether, when its survival involves the feeling of effort, this feeling is determined in advance, or absolutely ambiguous and matter of chance as far as all the other data are concerned, is the real question of the freedom of the will, and explains the strange intimateness of the feeling of effort to our personality.

"9. 'To single out the sense of muscular resistance as the 'force-sense' which alone can make us acquainted with the reality of an outward world is an error. We cognize outer reality by every sense. The muscular makes us aware of its hardness and pressure, just as other afferent senses make us aware of its other qualities. If they are too anthropomorphic to be true, so is it also.

"10. The ideational nerve-tracts alone are the seat of the feeling of mental effort. It involves no discharge downward into tracts connecting them with lower executive centres, though such discharge may follow upon the completion of the nerve-processes to which the effort corresponds."

SHORTER NOTICES.

I. DIE PROVINZIAL-IRREN-, BLINDEN- UND TAUBSTUMMEN-AUSTALTEN DER RHEINPROVINZ, in ihrer Entstehung, Entwicklung und Verfassung. Dargestellt auf grund eines Beschlusses des 26. Rheinischen Provinzial-Landtages, von 3 Mai, 1879. Mit 48 in den Text gedruckten Holzschnitten. Düsseldorf, 1880.

II. A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By Louis A. Duhring, M.D. Second edition, revised and enlarged. Philadelphia: J. B. Lippincott & Co., 1881. Chicago: Jansen, McClurg & Co.

III. MEDICAL DIAGNOSIS, WITH SPECIAL REFERENCE TO PRACTICAL MEDICINE. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DaCosta, M.D. Illustrated with engravings on wood. Fifth edition, revised. Philadelphia: J. B. Lippincott & Co., 1881. Chicago: Jansen, McClurg & Co.

IV. FOOD FOR THE INVALID, THE CONVALESCENT, THE DYSPEPTIC AND THE GOUTY. By J. Milner Fothergill, M.D.,

Edinburgh, and Horatio C. Wood, M.D. New York : Macmillan & Co., 1880. Chicago : Jansen, McClurg & Co.

V. A PRACTICAL TREATISE ON THE MEDICAL AND SURGICAL USES OF ELECTRICITY ; including Localized and General Faradization ; Localized and Central Galvanization ; Electrolysis and Galvano-Cautery. By Geo. M. Beard, A.M., M.D., and A. D. Rockwell, A.M., M.D. Third edition. Revised by A. D. Rockwell, M.D. New York : Wm. Wood & Co., 1881. Chicago : W. T. Keener.

VI. DISEASES OF THE PHARYNX, LARYNX AND TRACHEA. By Morell Mackenzie, M.D., London. New York : Wm. Wood & Co., 1880. Chicago : W. T. Keener.

VII. A PRACTICAL TREATISE ON NASAL CATARRH. By Beverly Robinson, A.M., M.D., (Paris). New York : Wm. Wood & Co., 1880. Chicago : W. T. Keener.

VIII. MINOR SURGICAL GYNECOLOGY. A Manual of Uterine Diagnosis and the lesser Technicalities of Gynecological Practice, for the use of the advanced Student and general Practitioner. By Paul F. Mundé, M.D. New York : Wm. Wood & Co., 1880. Chicago : W. T. Keener.

I. This is an elaborate general report of the insane, blind, and deaf and dumb establishments of West Prussia, published by authority of a resolution of the Rhenish Provincial Landtag, at its 26th session in 1879. The first and by far the largest portion of the volume is devoted to the description of the five provincial asylums at Grafenberg, Bonn, Audernach, Düren and Merzig. It commences with a historical sketch of the care of the insane in the Rhine Province, from the foundation of the provincial asylum at Sugburg to its closure as a receiving hospital in 1878, from the pen of Dr. Nasse, director of the new establishment at Andernach. This is interesting as showing the growth and movement of the insane population of that territory.

The second section, of over one hundred and forty pages, gives a description of the five new asylums, their construction, architecture, material, water supply, heating, ventilation, sewerage, lighting, etc., in quite complete detail, and is illustrated by numerous diagrams and plans. After this come the descriptions and reports of four of the establishments by their directors or superintendents, Dr. Nasse reporting for Andernach, Dr. Pelman for Grafenberg, Dr. Ripping for Düren, and Dr. Noetel for Merzig. Though brief, they afford a very fair idea of the management of the different institutions and indicate, so far as can be seen, on the whole, a scientific treatment of the insane. We cannot say, however,

that the classification here given is altogether any better than that of the majority of American asylum reports. Where the subject is mentioned at all, the disuse of mechanical restraint seems to be the rule.

The third section gives the financial statements as to the cost of administration of the asylums, the expense of each single inmate, etc. Naturally we expect to find these figures less than the corresponding ones in this country, and are not disappointed. The annual cost per patient of the lower class in these four asylums ranges from about one hundred and twenty-eight to one hundred and seventy dollars, the amount being reduced as the number cared for is increased.

The volume concludes with similar accounts and figures of the institutions for the blind and for the deaf and dumb in the Rhine Province, as were given of the establishments for the insane. Taken altogether it affords a very excellent means for the comparison, in very many respects, of the method employed in Germany and those in use in this country. In this light it deserves a longer notice than we are able to give it here. We may, and indeed, expect to have occasion to refer to it in another review in a future number of this JOURNAL.

II. We expressed our opinion of this work, on the appearance of its first edition several years since, that it was about the best manual of the kind in our language. We see no reason to modify this opinion now; except to say that in its present form it is even better than before. As to the changes that have been made in this new edition, we cannot better inform our readers than by quoting the author's preface. Says Dr. Duhring: "The present edition has been thoroughly and carefully revised, many chapters having been entirely rewritten. It is also considerably enlarged, to the extent of about one hundred pages, the type being somewhat smaller than in the first edition. New matter has been liberally added, and will be found upon almost every page, together with critical remarks where such seem to be called for. The effort has been faithfully made throughout the volume to present the subject in the light of the latest dermatological researches. The forward strides of dermatology within the past few years have been remarkable. No specialty of medicine has grown so rapidly. Formerly a decade comprised comparatively few important discoveries, but now each year adds materially to our fund of knowledge. Frequently revised editions of works on diseases of the skin, therefore, are demanded.

"The chapter on the anatomy of the skin has been largely rewritten, and two new illustrations have been added, one showing the general anatomy of the integument, the other the minute structure of the epidermis. Both were drawn by Dr. Van Harlingen. Considerable matter pertaining to the physiology of the skin has also been incorporated with this chapter.

"The new articles are *uridrosis*, *phosphorescent sweat*, *urticaria pigmentosa*, *dermatitis circumscripta herpetiformis*, *impetigo herpetiformis*, *pityriasis maculata et circinata*, *dermatitis exfoliativa*, *dermatitis medica-mentosa*, *dermatitis gangrænosa*, *dermatitis papillaris capillitii*, *fungoid neoplasmata*, *tuberculosis cutis*, *podelcoma*, *ainhum*, *perforating ulcer of the foot*, and *myoma cutis*.

"Among the chapters which have been enlarged and to which important editions have been made, I may specially refer to *dysidrosis* and *pompholyx*, *hæmatidrosis*, *scleroderma*, *morphæa*, *atrophia cutis*, *hypertrophy of the hair*, *scrofuloderma*, *syphiloderma* and *carcinoma*."

It will be seen from the above that the book is not a mere reprint, but is really an improved and revised edition of what was before an excellent work. We repeat that we know of none better of its kind.

III. This fifth edition of the well known work of Da Costa on medical diagnosis is likely to continue in the favor it has so far enjoyed. As a students' manual of diagnosis, it is conveniently arranged and clearly and pleasantly written and tolerably complete. The changes in the present edition are principally in the chapters on the diagnosis of diseases of the nervous system and of the blood. In the first of these the author has embodied the results of recent clinical and pathological researches to a considerable extent, and yet there are many points in which it is open to criticism. Thus the space given to the diagnosis of certain conditions denominated here "softening of the brain" does not impress us favorably and appears, indeed, ancient and unscientific, at least in the nomenclature of nervous diseases. There may be, and probably is a condition that may be properly called softening of the brain apart from other recognized pathological species, but it must be extremely rare, and probably not easily diagnosed from directly opposite physical conditions. The term, as popularly used, however, and to some extent as used here in this work, is a misnomer, and the space given it, together with a few other defects that we need not notice, detracts somewhat from our estimate of the scientific value of this section. Apart from

these, however, and, indeed, we may say in general, the work is a good one and likely to be of value to the student and practitioner. The present edition is a decided advance on the preceding ones.

IV. This little book, if it carries out the idea of its projectors, is likely to be profitable to authors and publishers. The "fertile brain of Dr. Fothergill" has a thrifty practical turn, and the device of a book that could be prescribed like a dose of medicine, the prescriber ticking off the special diet list for his patient, as he would the items on a wash bill, is not a bad one from this point of view. It is a little surprising that the idea was not struck out long before. Dr. Fothergill's American associate's work is not nearly so conspicuous in this volume. Besides the introductory remarks, which are admitted by the former, the receipts themselves have very largely an English aspect. The book will be none the less useful, however, on this account, if it adds anything to the culinary resources of the native housekeeper. We can easily see how it can be very serviceable to the physician and his patients, and expect it to have a large circulation.

V. This third edition of Beard and Rockwell's "Medical Electricity" calls for only a short notice. We have already expressed an opinion in regard to the work in a former number of this JOURNAL, and the present edition does not differ sufficiently from the former one to materially change our views. We will only say that it contains, on the whole, about as much information on the subject of electro-therapeutics as any work in our language, and the discriminating and intelligent reader will find it often useful and suggestive.

VI. This is an excellent work, and one of the best issues of Wood's library for 1880. The ideas are good, the style clear, and the illustrations numerous and helpful. It is well worthy a place in any physician's library.

VII. This is a pretty fair practical treatise on a limited subject. Nasal catarrh in its various forms is so frequent and troublesome a complaint that such a book as this, if of any merit whatever, is likely to be useful. It is very neatly gotten up, well printed, and quite fully illustrated.

VIII. This work is intended for the general practitioner, not for the specialist in gynecology, and it will fulfil the purpose for which it was written. The physician who follows it will be able to act the more intelligently in many cases, but he is not much more independent of the consulting or operating gynecologist for

the information it conveys. It does not represent the most advanced ideas in the specialty ; many of the appliances here described and figured, with more or less of approval or lack of condemnation, are, or ought to be, obsolete in any well regulated practice.

The book will be a useful one, we do not doubt, but it is hardly a fair representation of many things in its department of medical science, and we wish it were a better one.